

This document gives pertinent information concerning the modification of the VPDES Permit listed below. This permit is being processed as a **Minor, Municipal** permit. The discharge results from the operation of a 0.02 MGD wastewater treatment plant with a modification request to add a lower 0.010 MGD flow tier and upgrade the plant. This permit action consists of updating the WQS, adding a flow tier and updating boilerplate. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: Fauquier Springs County Club
STP
P.O. Box 419
Warrenton, VA 20186
SIC Code : 4952 WWTP

Facility Location: 9236 Tournament Drive
Warrenton, VA 20186
County: Fauquier

Facility Contact Name: Robert E. Foley, President
Telephone Number: 540-347-4205
2. Permit No.: VA0077411
Expiration Date of previous permit: 10/01/08

Other VPDES Permits associated with this facility: None
Other Permits associated with this facility: None
E2/E3/E4 Status: N/A
3. Owner Name: Sulphur Springs Investment Corporation
Owner Contact/Title: Robert Foley/President
Telephone Number: 540-347-4205
4. Application Complete Date: May 20, 2008
Permit Drafted By: Susan Oakes
Date Drafted: August 27, 2008
Draft Permit Reviewed By: Alison Thompson
Date Reviewed: September 9, 2008
Public Comment Period : Start Date: November 20, 2008
End Date: December 19, 2008
5. Receiving Waters Information: See **Attachment 1** for the Flow Frequency Determination
Receiving Stream Name : Rappahannock River
Drainage Area at Outfall: 205.7 sq.mi.
River Mile: 3-RPP158.41
Stream Basin: Rappahannock River
Subbasin: Rappahannock River
Section: 3
Stream Class: III
Special Standards: None
Waterbody ID: VAN-E02R
7Q10 Low Flow: 1.7 MGD
7Q10 High Flow: 21 MGD
1Q10 Low Flow: 1.4 MGD
1Q10 High Flow: 17 MGD
Harmonic Mean Flow: 25 MGD
30Q5 Flow: 6.1 MGD
303(d) Listed: No
30Q10 Flow: 3.7 MGD
TMDL Approved: Upper Rappahannock
River Basin Bacteria
TMDL
Date TMDL Approved: January 23, 2008
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<input checked="" type="checkbox"/> State Water Control Law	<input checked="" type="checkbox"/> EPA Guidelines
<input checked="" type="checkbox"/> Clean Water Act	<input checked="" type="checkbox"/> Water Quality Standards
<input checked="" type="checkbox"/> VPDES Permit Regulation	<input type="checkbox"/> Other
<input checked="" type="checkbox"/> EPA NPDES Regulation	

7. Licensed Operator Requirements: Class IV

8. Reliability Class: Class II

9. Permit Characterization:

<input checked="" type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input type="checkbox"/> Possible Interstate Effect
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input checked="" type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

The Fauquier Springs Country Club (FSCC) STP consists of an aerobic lagoon with two floating aerators, tablet chlorination, tablet dechlorination, step cascade aeration, and a shore-based outfall to the Rappahannock River.

As a result of a request from DEQ to evaluate the Corrective Action Plan (CAP) for the groundwater contamination, the permittee has made the determination to upgrade the existing system by replacing the lagoon with a 0.010 MGD extended aeration plant. The permittee has; therefore, requested a permit modification to add a lower 0.010 MGD flow tier to the existing 0.02 MGD plant. Current average flows are less than half the design flow of 0.02 MGD and the engineering consultant for the facility believes that the lower flow tier will serve the present needs of the permittee. The 0.010 MGD equipment train will be installed with the ability to allow for placement of a future 0.010 MGD parallel train. The proposed treatment system will consist of a bar screen, flow equalization, extended aeration, clarifier, passive chlorination, passive dechlorination, cascade aeration and an aerated sludge holding tank.

See **Attachment 2** for a facility schematic/diagram.

TABLE 1 – Outfall Description

Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude and Longitude
001	Domestic Wastewater	See Item 10 above.	0.02 MGD with a 0.010 MGD flow tier	38° 39' 16" N 77° 52' 32" W
See Attachment 3 for Jeffersonton, DEQ #196B topographic map.				

11. Sludge Treatment and Disposal Methods:

Because this treatment works is a lagoon, sludge is anaerobically digested along the bottom. Sludge will slowly accumulate over time, and will be removed for treatment and disposal when sludge depth negatively affects wastewater treatment, or if the lagoon is closed. A sludge accumulation profile is to be developed annually in accordance with the Operations and Maintenance (O&M) Manual.

Sludge from the treatment plant will be periodically pumped from the aerated sludge holding tank and transported to the Remington Regional Wastewater Treatment Plant (VA0076805) for disposal.

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge

TABLE 2	
3-RPP175.51	DEQ Ambient Monitoring Station at the Rt. 647 bridge, 17.1 miles upstream of the FSCC plant discharge. River mile 175.51.
3-RPP170.36	DEQ Ambient Monitoring Station at Rt. 645, Tapp's Ford Road, 12 miles upstream of the FSCC plant discharge. River mile 170.36.
VA0088731	River Ridge STP (proposed); permitted to discharge 0.050 MGD 4.1 miles upstream of the FSCC plant discharge. River mile 162.55.
VA0029238	Existing Clevengers Village STP, permitted for 0.070 MGD. Discharges to an unnamed tributary of the Rappahannock, feeding into it approximately one-quarter mile upstream of the proposed Clevengers Village WWTP. River mile XAN0.76.
VA0080527	Clevengers Village WWTP (proposed 0.86 MGD discharge scheduled for completion January 2009), 1.5 miles upstream of the FSCC plant. River mile 159.9.
3-RPP147.10	DEQ Ambient Monitoring Station at the Rt. 15/29 bridge, 11.3 miles downstream of the FSCC plant discharge. River mile 147.10.
VA0076805	Remington STP, permitted for 1.4 MGD. Discharges to the Rappahannock River 13.9 miles downstream of the FSCC plant. River mile 144.48.
3-RPP175.51	DEQ Ambient Monitoring Station at the Rt. 647 bridge, 17.1 miles upstream of the FSCC plant discharge. River mile 175.51.

13. Material Storage:

TABLE 3 - Material Storage		
Materials Description	Volume Stored	Spill/Stormwater Prevention Measures
The only chemicals used in the treatment of wastewater at this facility are chlorine tablets and dechlorination tablets, which are stored in the operator's office.		

14. Site Inspection: Performed by Susan Oakes and Sharon Mack on May 14, 2008 (see **Attachment 4**).

15. Receiving Stream Water Quality and Water Quality Standards:a) Ambient Water Quality Data

This facility discharges to an unassessed portion of the Rappahannock River. However, further downstream on the Rappahannock River (approximately 8.09 rivermiles downstream from this discharge) is DEQ ambient/biological water quality monitoring station 3-RPP150.32, located at the Route 621 bridge crossing. Below is a summary of the monitoring data associated with that station, taken from the draft 2008 Integrated Assessment:

Samples tested for pH, DO, and Temperature were in compliance with water quality criteria. Sufficient excursions from the instantaneous E. coli bacteria criterion (6 of 16 samples - 37.5%) were recorded at the monitoring station to assess this stream segment as not supporting of the recreation use goal for the 2008 water quality assessment. The segment was previously listed for a fecal coliform bacteria impairment, as well, for the 2006 assessment. The E. coli bacteria impairment was first listed in 2006.

Several other segments of the Rappahannock River are listed as impaired on the 303(d) list. See the planning statement located in the permit file for details.

b) Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Rappahannock River is located within Section 3 of the Rappahannock River Basin, and classified as a Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C, and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 5 details other water quality criteria applicable to the receiving stream.

Ammonia:

Staff evaluated receiving stream ambient monitoring data for pH and temperature from monitoring station 3-RPP150.32 which is closer in proximity to the outfall than the previously used monitoring station data. Staff found no significant differences from the data used to establish ammonia criteria and subsequent effluent limits in the previous permit nor with the more recent ambient monitoring data from 3-RPP147.10, therefore, the previously established pH and temperature values will be carried forward as part of this reissuance process.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/l calcium carbonate). The average hardness of the receiving stream is not significantly different from the previous hardness used (31.2 mg/L vs. 31.1 mg/L), therefore, the hardness-dependent metals criteria shown in Attachment 5 are based on the previous hardness value.

Bacteria Criteria: The Virginia Water Quality Standards (9 VAC 25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

- 1) *E. coli* bacteria per 100 ml of water shall not exceed the following:

	Geometric Mean ¹	Single Sample Maximum
Freshwater <i>E. coli</i> (N/100 ml)	126	235

¹For two or more samples [taken during any calendar month].

c) Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes, and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Rappahannock River, is located within Section 3 of the Rappahannock River Basin. This section has been designated with no special standard designations.

d) Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched for records to determine if there are threatened or endangered species in the vicinity of the discharge. No threatened or endangered species were identified.

16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies

are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 2. The segment of the Rappahannock River receiving the FSCC discharge was classified as Tier 2 prior to the previous permit reissuance in 1997 and has been carried forward with this reissuance. No significant degradation to the existing water quality will be allowed. In accordance with current DEQ guidance, no significant lowering of water quality is to occur where permit limits are based on the following:

- The dissolved oxygen in the receiving stream is not lowered more than 0.2 mg/L from the existing levels;
- The pH of the receiving stream is maintained within the range 6.0-9.0 S.U.;
- There is compliance with all temperature criteria applicable to the receiving stream;
- No more than 25% of the unused assimilative capacity is allocated for toxic criteria established for the protection of aquatic life; and
- No more than 10% of the unused assimilative capacity is allocated for criteria for the protection of human health.

The antidegradation policy also prohibits the expansion of mixing zones to Tier 2 waters unless the requirements of 9 VAC 25-260-30.A.2. are met. The draft permit is not proposing an expansion of the existing mixing zone.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development :

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLA) are calculated. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are calculated on the most limiting WLA, the required sampling frequency, and statistical characteristics of the effluent data.

a) Effluent Screening:

Effluent data obtained from DMR submittals from January 2003 through June 2008 has been reviewed and determined to be suitable for evaluation. During this time frame, the facility had three exceedances of the TSS average, and one exceedance of the TSS maximum.

The following pollutants require a wasteload allocation analysis: Ammonia and TRC.

b) Mixing Zones and Wasteload Allocations (WLAs):

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:

WLA	=	Wasteload allocation
C _o	=	In-stream water quality criteria
Q _e	=	Design flow
f	=	Decimal fraction of critical flow from mixing evaluation
Q _s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
C _s	=	Mean background concentration of parameter in the receiving stream.

The Water Quality Standards contain two distinct mixing zone requirements. The first requirement is general in nature and requires the "use of mixing zone concepts in evaluating permit limits for acute and chronic standards in 9 VAC 25-260-140.B". The second requirement is specific and establishes special restrictions for regulatory mixing zones "established by the Board".

The Department of Environmental Quality uses a simplified mixing model to estimate the amount of mixing of a discharge with the receiving stream within specified acute and chronic exposure periods. The simplified model contains the following assumptions and approximations:

- The effluent enters the stream from the bank, either via a pipe, channel or ditch.
- The effluent velocity isn't significantly greater (no more than 1 - 2 ft/sec greater) than the stream velocity.
- The receiving stream is much wider than its depth (width at least ten times the depth).
- Diffusive mixing in the longitudinal direction (lengthwise) is insignificant compared with advective transport (flow).
- Complete vertical mixing occurs instantaneously at the discharge point. This is assumed since the stream depth is much smaller than the stream width.
- Lateral mixing (across the width) is a linear function of distance downstream.
- The effluent is neutrally buoyant (e.g. the effluent discharge temperature and salinity are not significantly different from the stream's ambient temperature and salinity).
- Complete mix is determined as the point downstream where the variation in concentration is 20% or less across the width and depth of the stream.
- The velocity of passing and drifting organisms is assumed equal to the stream velocity.

If it is suitably demonstrated that a reasonable potential for lethality or chronic impacts within the physical mixing area doesn't exist, then the basic complete mix equation, with 100% of the applicable stream flow, is appropriate. If the mixing analysis determines there is a potential for lethality or chronic impacts within the physical mixing area, then the proportion of stream flow that has mixed with the effluent over the allowed exposure time is used in the basic complete mix equation. As such, the wasteload allocation equation is modified to account for the decimal fraction of critical flow (f).

Staff derived wasteload allocations where parameters are reasonably expected to be present in an effluent (e.g., total residual chlorine where chlorine is used as a means of disinfection) and where effluent data indicate the pollutant is present in the discharge above quantifiable levels. With regard to the Outfall 001 discharge: ammonia as N is likely present since this is a STP treating sewage and total residual chlorine may be present since chlorine is used for disinfection. As such, **Attachment 6** details the mixing analysis results and **Attachment 5** details the WLA derivations for these pollutants.

Antidegradation Wasteload Allocations (AWLAs).

Since the receiving stream has been determined to be a Tier II water, staff must also determine antidegradation wasteload allocations (AWLAs). The steady state complete mix equation is used substituting the antidegradation baseline (C_b) for the in-stream water quality criteria (C_o):

$$AWLA = \frac{C_b (Q_e + Q_s) - (C_s) (Q_s)}{Q_e}$$

Where:

AWLA	=	Antidegradation-based wasteload allocation
C_b	=	In-stream antidegradation baseline concentration
Q_e	=	Design flow
Q_s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; and 30Q5 for non-carcinogen human health criteria)
C_s	=	Mean background concentration of parameter in the receiving stream.

Calculated AWLAs for the pollutants noted in b. above are presented in **Attachment 5**.

c) Effluent Limitations Toxic Pollutants, Outfall 001

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with (A)WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

1) Ammonia as N:

Although the newly calculated ammonia criteria allows for a relaxation of the ammonia effluent limitations, ammonia monitoring is part of the Groundwater Monitoring Plan. The facility has been meeting the existing ammonia limits; however, the ammonia concentrations have been exceeding the groundwater standard; therefore, staff proposes to carry forward the current limit (see **Attachment 7**). Although a re-evaluation of the ammonia limits at the 0.010 MGD flow tier would indicate a relaxation of the ammonia effluent limitations as well, the current limits will be carried forward for the 0.010 flow tier for the same reasons given above.

Note: A correction to the monthly and weekly average limitations is being made to reflect the 1/M monitoring. The limit for both the monthly and weekly averages is 16 mg/L Total Residual Chlorine:

2) Chlorine is used for disinfection and is potentially in the discharge. Staff calculated WLAs for TRC using current critical flows and the mixing allowance. In accordance with current DEQ guidance, staff used a default data point of 0.2 mg/L and the calculated WLAs to derive limits. A monthly average of 0.070 mg/L and a weekly average limit of 0.090 mg/L are proposed for this discharge (see **Attachment 7**). The monthly average and weekly average noted above will be carried forward for the 0.010 MGD flow tier as well.

3) Metals/Organics:

No limits are needed.

d) Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to dissolved oxygen (D.O.), biochemical oxygen demand-5 day (BOD₅), total suspended solids (TSS), and pH limitations are proposed.

Dissolved Oxygen, and BOD₅, limitations are based on the stream modeling conducted in July 1998 (**Attachment 8**) and are set to meet the water quality criteria for D.O. in the receiving stream and are set to ensure that the receiving stream D.O. does not decrease more than 0.2 mg/l to meet the requirements of the antidegradation policy. The dissolved oxygen limitation at the 0.010 MGD flow tier are also based on the stream modeling described above and carried forward with this modification.

It is staff's practice to equate the Total Suspended Solids limits with the BOD₅ limits. TSS limits are established to equal BOD₅ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9 VAC25-260-170 and continue based on the WLA given to the permittee as part of the Upper Rappahannock River Basin Bacteria TMDL.

e) Effluent Limitations and Monitoring Summary.

The effluent limitations are presented in the following table. Limits were established for Flow, BOD₅, Total Suspended Solids, Ammonia, pH, Dissolved Oxygen, Total Residual Chlorine and *E. coli*.

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/l), with the flow values (in MGD) and a conversion factor of 3.785. Monthly and weekly average loadings were re-calculated for the 0.01 MGD flow tier.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

18. Antibacksliding:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19a. Effluent Limitations/Monitoring Requirements:

Design flow is 0.010 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 0.010 MGD facility and lasting until the issuance of the CTO for the 0.02 MGD facility or the permit expiration date, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS						MONITORING REQUIREMENTS	
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		NA		NA	NL	1/D	EST
pH	3	NA		NA		6.0 S.U.	9.0 S.U.	1/D	Grab
BOD ₅	3,5	30 mg/L	1.1 kg/d	45 mg/L	1.7 kg/d	NA	NA	1/M	Grab
Total Suspended Solids (TSS)	2	30 mg/L	1.1 kg/d	45 mg/L	1.7 kg/d	NA	NA	1/M	Grab
DO	3,5	NA		NA		6 mg/L	NA	1/D	Grab
Ammonia, as N (mg/L)	3,5	16 mg/L		16 mg/L		NA	NA	1/M	Grab
<i>E. coli</i> (Geometric Mean)	3	126 n/100mls		NA		NA	NA	2/M ⁽⁶⁾	Grab
Total Residual Chlorine (after contact tank)	2, 3, 4	NA		NA		1.0 mg/L	NA	1/D	Grab
Total Residual Chlorine (after dechlorination)	3	0.070 mg/L		0.090 mg/L		NA	NA	1/D	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements

2. Best Professional Judgement

3. Water Quality Standards

4. DEQ Disinfection Guidance

5. Stream Model- Attachment 8

6. Between 10am and 4 pm

MGD = Million gallons per day.*N/A* = Not applicable.*NL* = No limit; monitor and report.*S.U.* = Standard units.*1/D* = Once every day.*1/M* = Once every month.*2/M* = Twice every month, 7 days apart.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

EST = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

19b. Effluent Limitations/Monitoring Requirements:

Design flow is 0.02 MGD.

Effective Dates: During the period beginning with the permit's effective modification date and lasting until the issuance of the CTO for the 0.010 MGD facility or the permit expiration date, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS			
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		NA		NA	NL	1/D	EST
pH	3	NA		NA		6.0 S.U.	9.0 S.U.	1/D	Grab
BOD ₅	3,5	30 mg/L	2.3 kg/d	45 mg/L	3.4 kg/d	NA	NA	1/M	Grab
Total Suspended Solids (TSS)	2	30 mg/L	2.3 kg/d	45 mg/L	3.4 kg/d	NA	NA	1/M	Grab
DO	3,5	NA		NA		6 mg/L	NA	1/D	Grab
Ammonia, as N (mg/L)	3,5	16 mg/L		16 mg/L		NA	NA	1/M	Grab
<i>E. coli</i> (Geometric Mean)	3	126 n/100mls		NA		NA	NA	2/M ⁽⁶⁾	Grab
Total Residual Chlorine (after contact tank)	2, 3, 4	NA		NA		1.0 mg/L	NA	1/D	Grab
Total Residual Chlorine (after dechlorination)	3	0.070 mg/L		0.090 mg/L		NA	NA	1/D	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements

2. Best Professional Judgement

3. Water Quality Standards

4. DEQ Disinfection Guidance

5. Stream Model- Attachment 8

6. Between 10am and 4 pm

MGD = Million gallons per day.*NA* = Not applicable.*NL* = No limit; monitor and report.*S.U.* = Standard units.*1/D* = Once every day.*1/M* = Once every month.*2/M* = Twice every month, 7 days apart.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

EST = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

19c. Effluent Limitations/Monitoring Requirements:

Design flow is 0.02 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 0.02 MGD facility and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS			
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		NA		NA	NL	1/D	EST
pH	3	NA		NA		6.0 S.U.	9.0 S.U.	1/D	Grab
BOD ₅	3,5	30 mg/L	2.3 kg/d	45 mg/L	3.4 kg/d	NA	NA	1/M	Grab
Total Suspended Solids (TSS)	2	30 mg/L	2.3 kg/d	45 mg/L	3.4 kg/d	NA	NA	1/M	Grab
DO	3,5	NA		NA		6 mg/L	NA	1/D	Grab
Ammonia, as N (mg/L)	3,5	16 mg/L		16 mg/L		NA	NA	1/M	Grab
<i>E. coli</i> (Geometric Mean)	3	126 n/100mls		NA		NA	NA	2/M ⁽⁶⁾	Grab
Total Residual Chlorine (after contact tank)	2, 3, 4	NA		NA		1.0 mg/L	NA	1/D	Grab
Total Residual Chlorine (after dechlorination)	3	0.070 mg/L		0.090 mg/L		NA	NA	1/D	Grab

The basis for the limitations codes are:

1. Federal Effluent Requirements

2. Best Professional Judgement

3. Water Quality Standards

4. DEQ Disinfection Guidance

5. Stream Model- Attachment 8

6. Between 10am and 4 pm

MGD = Million gallons per day.*N/A* = Not applicable.*NL* = No limit; monitor and report.*S.U.* = Standard units.*1/D* = Once every day.*1/M* = Once every month.*2/M* = Twice every month, 7 days apart.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

EST = Reported flow is to be based on the technical evaluation of the sources contributing to the discharge.

19d. Groundwater Monitoring Requirements:

Effective Dates: During the period beginning with the permit's effective date and lasting until the permit expiration date.

For wells: MW1, MW3 and MW4

PARAMETERS	UNITS	LIMIT	Monitoring Requirements	
			FREQUENCY	SAMPLE TYPE
Static water level	Ft.	NL	1/M	Measured
pH	S.U.	NL	1/M	Grab
Conductivity	µmho/cm	NL	1/M	Grab
Total Organic Carbon	mg/L	NL	1/M	Grab
<i>E. coli</i>	n/100 mL	NL	1/M	Grab
Nitrate-N	mg/L	NL	1/M	Grab
Nitrite-N	mg/L	NL	1/M	Grab
Total Dissolved Solids	mg/L	NL	1/M	Grab
Ammonia as N	mg/L	NL	1/M	Grab
Temperature	deg C	NL	1/M	IS

1. Sampling shall be conducted monthly and reported quarterly. The quarterly reporting periods shall be January, April, July, and October. The DMR shall be submitted no later than the 10th day of the month following the monitoring period. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.
2. The permittee may request in writing that the sampling frequency be reduced to quarterly once the Corrective Action Plan has been implemented and the groundwater analytical results comply with state groundwater quality standards for a period of two years.
3. Groundwater contamination may be present for some time after the lagoon is closed. In order to compare contaminant concentrations to risk-based concentrations and to determine if further actions are warranted, the groundwater monitoring shall continue after lagoon closure and issuance of the CTO for the 0.010 MGD treatment system in accordance with the groundwater monitoring requirements contained in this permit.
4. The static water level shall be measured prior to bailing the well water for sampling. At least three volumes of groundwater shall be withdrawn immediately before sampling each well.

1/M = Once per month.

IS = Immersion Stabilization

Grab = An individual sample collected over a period not to exceed 15-minutes.

20. Other Permit Requirements :

Part I.B. of the permit contains additional chlorine monitoring requirements, quantification levels and compliance reporting instructions.

A minimum chlorine residual must be maintained at the exit of the chlorine contact tank to assure adequate disinfection. No more than 10% of the monthly test results for TRC at the exit of the chlorine contact tank shall be <1.0 mg/L with any TRC <0.6 mg/L considered a system failure. Monitoring at numerous STPs has concluded that a TRC residual of 1.0 mg/L is an adequate indicator of compliance with the *E. coli* criteria. *E. coli* limits are defined in this section as well as monitoring requirements to take effect should an alternate means of disinfection be used.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

21. Other Special Conditions :

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.B.2. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. The facility is a PVOTW.
- b) Indirect Dischargers. Required by VPDES Permit Regulation, 9 VAC 25-31-280 B.9 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. Ninety days after a Certificate to Operate is issued for the 0.010 MGD treatment plant, the permittee shall submit for approval to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO), a revised Operations and Maintenance Manual (O&M). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9 VAC 25-31-200 C, and Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. This facility does not currently require a licensed operator. Upon issuance of the CTO for the 0.010 MGD treatment plant, the facility shall require a Class IV licensed operator.
- f) Reliability Class. The Sewage Collection and Treatment Regulation at 9 VAC 25-790 requires sewerage works achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. The facility is required to meet a reliability Class of II.
- g) Sludge Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.C.4. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

- h) Sludge Use and Disposal. The VPDES Permit Regulation at 9 VAC 25-31-100.P., 220.B.2., and 420-720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. Sludge use and disposal practices shall be revised and submitted to DEQ for review and approval 90 days after issuance of the CTO for the 0.010 MGD treatment plant.
- i) Treatment Works Closure Plan. State Water Control Law §62.1-44.15:1.1, makes it illegal for an owner to cease operation and fail to implement a closure plan when failure to implement the plan would result in harm to human health or the environment. This condition is used to notify the owner of the need for a closure plan where a facility is being replaced or is expected to close. The facility has a closure plan. The lagoon shall be closed in accordance with the closure plan not later than five (5) months after completion of the diversion of the lagoon wastewater to the new treatment plant.
- j) Groundwater Monitoring. Groundwater data shows exceedances of state groundwater quality standards, in particular for Ammonia, Total Dissolved Solids (TDS), and Total Organic Carbon (TOC). The permittee shall increase its sampling to monthly but continue quarterly reporting and revise the ground water monitoring plan. Submit the revised plan to DEQ for review and approval by March 22, 2009. The approved plan is an enforceable part of the permit. Any changes to the plan must be submitted for approval to the Northern Regional Office.
Note: The Groundwater Monitoring requirements shall remain in effect after the installation of the 0.010 MGD treatment plant and continue until DEQ has determined that no further actions are warranted.
- k) Corrective Action Plan. State Water Control Law § 62.1-1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. Ground water monitoring for parameters of concern will indicate whether possible lagoon seepage is resulting in violations to the State Water Control Board's Ground Water Standards. Ground water monitoring consists of three monitoring wells: MW1, MW3 and MW4. Monitoring results from March 2003 through June 2008 (copy of results located in permit file), were reviewed by DEQ Remediation Staff and indicate that seepage is occurring from the lagoon exceeding state groundwater quality standards. A Corrective Action Plan submitted in 1999 was reviewed but appears was never implemented. The permittee shall submit a revised corrective action plan by March 22, 2009. The plan shall set forth the steps to be taken by the permittee to ensure that the contamination source is eliminated or that the contaminant plume is contained on the permittee's property. The facility shall ensure that the CAP also addresses the issues identified in the DEQ Remediation Staff Memorandum (**Attachment 9**). Once approved, this revised plan shall become an enforceable part of this permit. The permittee submitted a revised Corrective Action Plan on March 23, 2009 addressing the groundwater contamination. The permittee evaluated four options and made the determination to abandon the existing 0.02 MGD lagoon and construct a 0.010 MGD extended aeration plant expandable to 0.02 MGD. The permittee; therefore, requested a permit modification to add a 0.010 MGD flow tier to its existing permit.

Permit Section Part II. Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

22. Changes to the Permit from the Previously Issued Permit:

- a) Special Conditions: None.
The lagoon shall be closed after issuance of the CTO for the 0.010 MGD plant in accordance with the Closure Plan revised May 2009 but not later than five (5) months after completion of the diversion of the lagoon wastewater to the new treatment plant. Certification in writing shall be made to DEQ-NRO within 30 days of decommissioning completion.
- b) Monitoring and Effluent Limitations:
- Groundwater sampling has been increased from quarterly to monthly with continued quarterly reporting.
 - Corrected average weekly ammonia limit to 16 mg/L.

23. Variances/Alternate Limits or Conditions: None.**24. Public Notice Information:**

First Public Notice Date: November 19, 2008

Second Public Notice Date: November 26, 2008

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected, and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3863, saoakes@deq.virginia.gov. See **Attachment 10** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer, and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

25. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

VA0077411 discharges to an unassessed portion of the Rappahannock River. Several segments of the Rappahannock River, however, are listed as impaired on the 303(d) list. The closest segment of the Rappahannock River downstream from the discharge of VA0077411 that is listed as impaired on the 303(d) list is segment VAN-E02R_RPP01A02. Segment VAN-E02R_RPP01A02 is listed as impaired for the recreational use. A TMDL has not been prepared for segment VAN-E02R_RPP01A02 (TMDL due date 2018). However, an *E. coli* TMDL has been completed for several other downstream segments of the Rappahannock River. These segments were included in the Upper Rappahannock River Basin Bacteria TMDL which was submitted to EPA and approved 1/23/2008. While a TMDL has not been completed for VAN-E02R_RPP01A02, the Upper Rappahannock River Basin Bacteria TMDL did include discharges from all upstream point sources. Thus, a WLA of **3.48E+10 cfu/year** for *E. coli* was given to VA0077411. This permit has a limit of 126n/100 ml for *E. coli* which is in compliance with the TMDL. Additional information can be found in the planning statement and excerpts from the TMDL located in the permit file. Note: With the expected EPA approval of the Triennial Review this year, a TMDL will not be required for this segment. In this case, the segment will be "nested" with the Upper Rappahannock River Basin Bacteria TMDL since the impaired segment was considered in the TMDL bacteria calculations.

26. Additional Comments:

Previous Board Action(s): None.

Staff Comments: None.

Public Comment: DEQ received comments from the Department of Conservation and Recreation (DCR), concerning occurrences of natural heritage resources. DCR identified the Green Floater, a freshwater mussel, as a natural heritage resource within the Rappahannock River-Carter Run Stream Conservation Unit and suggested that a survey be conducted.

This facility was placed in service in 1968 and has a design flow of 0.02 MGD. No scheduled plans for an expansion or modification are noted. The dimensions of the current mixing zone will not change. In the reissuance of this permit, Staff reviewed the permit application package, previous permit, fact sheet and application, effluent data, and receiving stream conditions.

Effluent limits were established to be protective of water quality standards. In this case, the receiving stream has been classified as Tier 2. Tier 2 water bodies have water quality that is better than the water quality standards. It is staff's best professional judgment that the permit has been drafted to protect both human health and the environment and therefore, there is no cause to conduct a survey. The DCR correspondence has been placed in the permit file along with a copy of the response letter to DCR and to the permittee.

EPA Checklist: The checklist can be found in **Attachment 11**.

Fauquier Springs Country Club STP
Fact Sheet Attachments – Table of Contents
VA0077411

Attachment 1	Flow Frequency Determination
Attachment 2	Facility schematic/flow diagram
Attachment 3	Jeffersonton, DEQ #196B topographic map
Attachment 4	Site Inspection
Attachment 5	Wasteload Allocations/Water Quality Criteria
Attachment 6	Mixing Zone Analysis
Attachment 7	Statistical analysis for Ammonia and Total Residual Chlorine effluent limitations
Attachment 8	DO Model
Attachment 9	Groundwater Evaluation Memorandum
Attachment 10	Public Notice
Attachment 11	EPA Checklist

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

SUBJECT: Flow Frequency Determination
Fauquier Springs Country Club STP - VA#0077411

TO: James A. Olson, NRO

FROM: Paul E. Herman, P.E., WQAP

DATE: November 4, 1997

COPIES: Ron Gregory, Charles Martin, File

This memo supercedes my February 9, 1993 memo to Joan Crowther concerning flow frequencies for the subject facility.

The Fauquier Springs Country Club STP discharges to the Rappahannock River near the Route 802 bridge in Fauquier County, VA. Stream flow frequencies are required at this site for use by the permit writer in developing effluent limitations for the VPDES permit.

The USGS operated a continuous record gage on the Rappahannock River near Warrenton, VA (#01662000) from 1943 to 1986. The gage was located approximately 10 miles upstream from the discharge point. The flow frequencies for the gage and the discharge point are presented below. The values at the discharge point were determined by drainage area proportions and do not address any withdrawals, discharges, or springs lying upstream.

Rappahannock River near Warrenton, VA (#01662000):

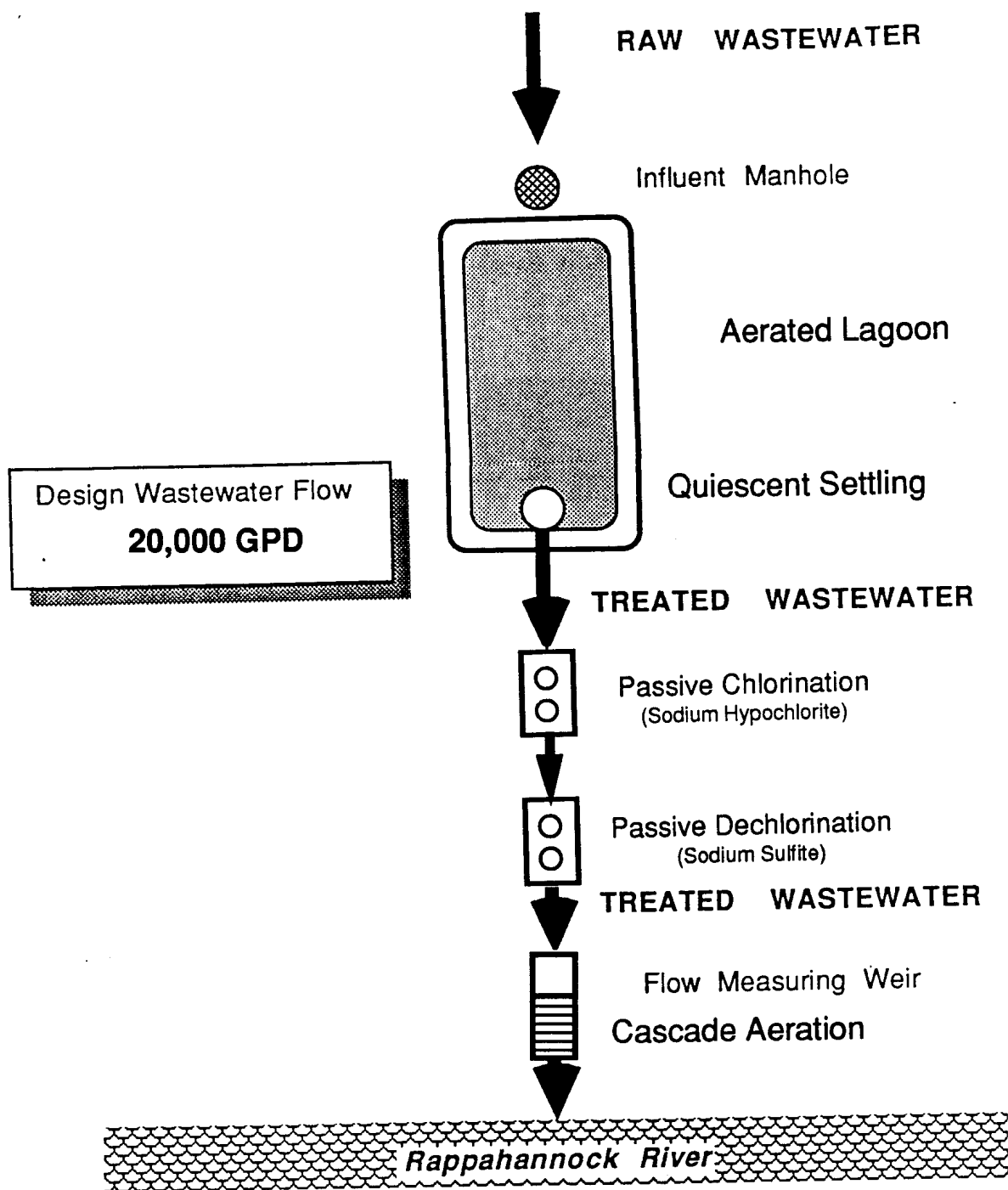
Drainage Area = 195 mi	
1Q10 = 2.1 cfs	High Flow 1Q10 = 25 cfs
7Q10 = 2.5 cfs	High Flow 7Q10 = 31 cfs
30Q5 = 9.1 cfs	HM = 37 cfs

Rappahannock River at discharge point:

Drainage Area = 205.7 mi	
1Q10 = 2.2 cfs	High Flow 1Q10 = 26 cfs
7Q10 = 2.6 cfs	High Flow 7Q10 = 33 cfs
30Q5 = 9.6 cfs	HM = 39 cfs

The high flow months are December through May. If you have any questions concerning this analysis, please let me know.

Attachment I



SULPHUR SPRINGS INVESTMENT CORPORATION WASTEWATER TREATMENT FACILITY PROCESS SCHEMATIC

gilbert w. clifford & associates

July, 1997



Pond depth 6'

Approximate dimensions at water surface: 217' x 81'

3HP Floating Aerators

Baffle Curtain

Anchor Post

Flow Port

Outlet Structure

Settling Tank

Chlorine
Contact Tank

Dechlorination MH

Cascade Aerator

Scale 1" = 40'

Rappahannock River

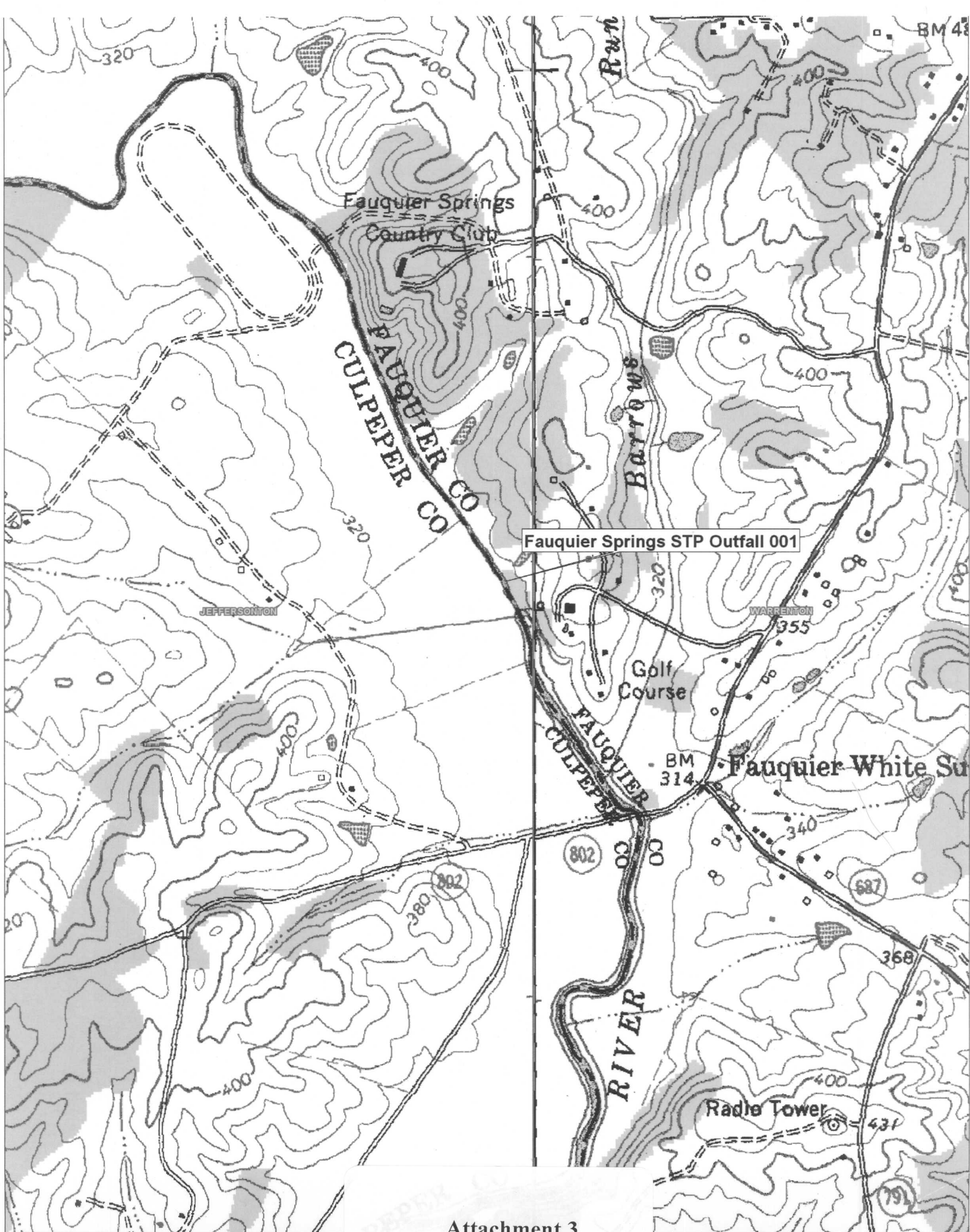
MH

Pond Bottom
Water Surface

Fauquier Springs Country Club Treatment Equipment Arrangement

Revision 1.0

March, 1999



Attachment 3

May 15, 2008

MEMORANDUM

TO: Fauquier Springs Country Club STP Permit File (VA0077411)

FROM: Susan A. Oakes

SUBJECT: Reissuance site inspection report

The purpose of this memo is to document the conditions of the Fauquier Springs Country Club (FSCC) STP and the Rappahannock River observed during a site inspection on May 14, 2008. Attendees for the inspection were Susan Oakes and Sharon Mack from DEQ and Hugh Flynn of FSCC.

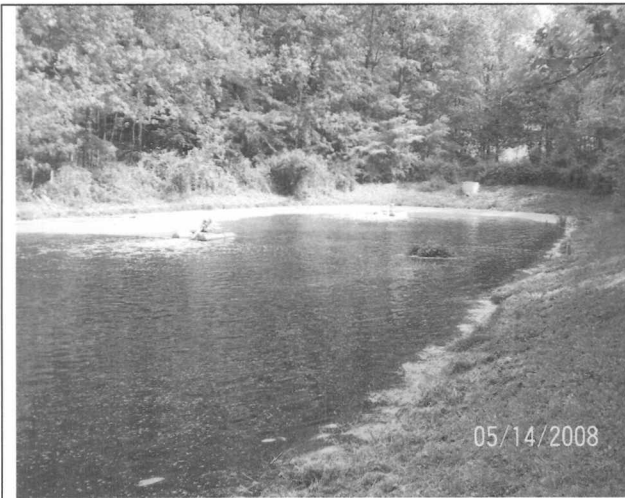
Fauquier Springs Country Club (FSCC) consists of a 30,000 square foot clubhouse with a bar, a grill, a formal dining room, several private function rooms, a card room, men's and women's locker rooms, and a pro shop; a golf course, a pool, and tennis courts. There are also a few houses on the property. The only connection to the wastewater plant is the clubhouse itself and one of the houses, the rest are on septic systems.

The FSCC STP consists of an aerobic lagoon, tablet chlorination, tablet dechlorination, cascade aeration, and a shore-based outfall to the Rappahannock River. The lagoon is separated into two sections. The first section, which is two thirds of the lagoon, has two floating aerators that run from 6am to 12 noon and 6 pm to 12 midnight (longer hours if the weather is extremely hot). There was a small amount of duckweed on the lagoon surface. The last third of the lagoon, which is separated by a floating baffle curtain to facilitate settling, was completely covered with duckweed. Staff also noted plant growth within the lagoon and along its borders. Staff perform maintenance on the aerators approximately every six months.

The lagoon discharge is located in a concrete structure, with the discharge pipe about two feet under the surface of the lagoon. A former discharge pipe, located two to three feet lower than the current one, has been sealed with concrete. Lagoon effluent gravity flows through a series of four manholes. The first manhole contains a four-tube tablet chlorinator; the third manhole is the sampling location for chlorine samples; the last manhole contains a four-tube tablet dechlorinator. Dechlorinated wastewater then flows down a step cascade aerator before discharging into the Rappahannock River.

The Rappahannock River at the site of the discharge was extremely muddy and moving rapidly due to recent heavy rainfall events. Staff noted mud and leaf debris along the grassy area a few feet from the manholes from the high water levels which overflowed the banks. One duck was observed in the river, however, no other aquatic life was observed due to the muddy conditions.

The compliance inspector noted that the samples taken at the step cascade aeration contained solids as a result of the recent rainfall. Staff also noted that no steps alongside the cascade step aeration had been installed as had been suggested at the last inspection to avoid any fall hazards. The previous inspection also noted that the O&M manual needed updating with regards to the single family home connection to the lagoon, however, the O&M manual did not appear to have been updated.



Lagoon



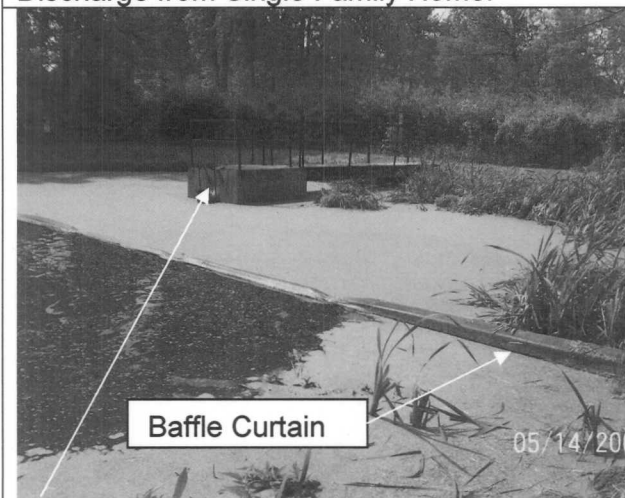
Closeup showing aerator & clump of vegetation



Discharge from Single Family Home.



Burrow in lagoon bank



Discharge Structure.



Discharge pipe from lagoon.



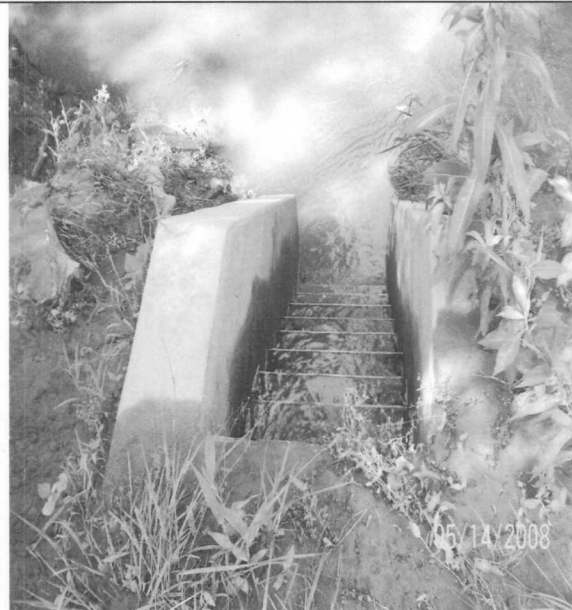
Chlorination



Dechlorination



Manholes for Chlor/Dechlor/Sampling.




Step Cascade Aeration.



Closeup Step Cascade Aeration.



Outfall area to Rappahannock after heavy rainfall.

 <p>05/14/2008</p>	
<p>Debris/mud residual from heavy rainfall overflow.</p>	

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Fauquier Springs Country Club STP

Permit No.: VA0077411

Receiving Stream: Rappahannock River

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) = 31.2 mg/L
 90% Temperature (Annual) = 24.7 deg C
 90% Temperature (Wet season) = deg C
 90% Maximum pH = 7.8 SU
 10% Maximum pH = SU
 Tier Designation (1 or 2) = 2
 Public Water Supply (PWS) Y/N? = n
 Trout Present Y/N? = n
 Early Life Stages Present Y/N? = y

Stream Flows

1Q10 (Annual) = 1.422 MGD
 7Q10 (Annual) = 1.68 MGD
 30Q10 (Annual) = 3.6 MGD
 1Q10 (Wet season) = 17.2 MGD
 30Q10 (Wet season) = 0 MGD
 30Q5 = 6.1 MGD
 Harmonic Mean = 25 MGD
 Annual Average = 0 MGD

Mixing Information

Annual - 1Q10 Mix = 9.27 %
 - 7Q10 Mix = 100 %
 - 30Q10 Mix = 100 %
 Wet Season - 1Q10 Mix = 0 %
 - 30Q10 Mix = 0 %

Effluent Information

Mean Hardness (as CaCO3) = mg/L
 90% Temp (Annual) = deg C
 90% Temp (Wet season) = deg C
 90% Maximum pH = SU
 10% Maximum pH = SU
 Discharge Flow = 0.02 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	8.3E+05	--	--	na	2.7E+02	--	--	na	8.3E+04	--	--	na	8.3E+04
Acrolein	0	--	--	na	7.8E+02	--	--	na	2.4E+05	--	--	na	7.8E+01	--	--	na	2.4E+04	--	--	na	2.4E+04
Acrylonitrile ^C	0	--	--	na	6.6E+00	--	--	na	8.3E+03	--	--	na	6.6E-01	--	--	na	8.3E+02	--	--	na	8.3E+02
Aldrin ^C	0	3.0E+00	--	na	1.4E-03	2.3E+01	--	na	1.8E+00	7.5E-01	--	na	1.4E-04	5.4E+01	--	na	1.8E-01	2.3E+01	--	na	1.8E-01
Ammonia-N (mg/l) (Yearly)	0	5.84E+01	3.71E+00	na	--	4.4E+02	6.7E+02	na	--	1.46E+01	9.27E-01	na	--	1.1E+03	1.7E+02	na	--	4.4E+02	1.7E+02	na	--
Ammonia-N (mg/l) (High Flow)	0	5.84E+01	7.09E+00	na	--	5.8E+01	7.1E+00	na	--	1.46E+01	1.77E+00	na	--	1.3E+04	1.8E+00	na	--	5.8E+01	1.8E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	3.4E+07	--	--	na	1.1E+04	--	--	na	3.4E+06	--	--	na	3.4E+06
Antimony	0	--	--	na	4.3E+03	--	--	na	1.3E+06	--	--	na	4.3E+02	--	--	na	1.3E+05	--	--	na	1.3E+05
Arsenic	0	3.4E+02	1.5E+02	na	--	2.6E+03	1.3E+04	na	--	8.5E+01	3.8E+01	na	--	6.1E+03	3.2E+03	na	--	2.6E+03	3.2E+03	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Benzene ^C	0	--	--	na	7.1E+02	--	--	na	8.9E+05	--	--	na	7.1E+01	--	--	na	8.9E+04	--	--	na	8.9E+04
Benzidine ^C	0	--	--	na	5.4E-03	--	--	na	6.8E+00	--	--	na	5.4E-04	--	--	na	6.8E-01	--	--	na	6.8E-01
Benzo (a) anthracene ^C	0	--	--	na	4.9E-01	--	--	na	6.1E+02	--	--	na	4.9E-02	--	--	na	6.1E+01	--	--	na	6.1E+01
Benzo (b) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	6.1E+02	--	--	na	4.9E-02	--	--	na	6.1E+01	--	--	na	6.1E+01
Benzo (k) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	6.1E+02	--	--	na	4.9E-02	--	--	na	6.1E+01	--	--	na	6.1E+01
Benzo (a) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	6.1E+02	--	--	na	4.9E-02	--	--	na	6.1E+01	--	--	na	6.1E+01
Bis2-Chloroethyl Ether	0	--	--	na	1.4E+01	--	--	na	4.3E+03	--	--	na	1.4E+00	--	--	na	4.3E+02	--	--	na	4.3E+02
Bis2-Chloroisopropyl Ether	0	--	--	na	1.7E+05	--	--	na	5.2E+07	--	--	na	1.7E+04	--	--	na	5.2E+06	--	--	na	5.2E+06
Bromoform ^C	0	--	--	na	3.6E+03	--	--	na	4.5E+06	--	--	na	3.6E+02	--	--	na	4.5E+05	--	--	na	4.5E+05
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	1.6E+06	--	--	na	5.2E+02	--	--	na	1.6E+05	--	--	na	1.6E+05
Cadmium	0	9.0E-01	4.5E-01	na	--	6.8E+00	3.8E+01	na	--	2.6E-01	1.1E-01	na	--	1.9E+01	9.6E+00	na	--	6.8E+00	9.6E+00	na	--
Carbon Tetrachloride ^C	0	--	--	na	4.4E+01	--	--	na	5.5E+04	--	--	na	4.4E+00	--	--	na	5.5E+03	--	--	na	5.5E+03
Chlordane ^C	0	2.4E+00	4.3E-03	na	2.2E-02	1.8E+01	3.7E-01	na	2.8E+01	6.0E-01	1.1E-03	na	2.2E-03	4.3E+01	9.1E-02	na	2.8E+00	1.8E+01	9.1E-02	na	2.8E+00
Chloride	0	8.6E+05	2.3E+05	na	--	6.5E+06	2.0E+07	na	--	2.2E+05	5.8E+04	na	--	1.6E+07	4.9E+06	na	--	6.5E+06	4.9E+06	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.4E+02	9.4E+02	na	--	4.8E+00	2.8E+00	na	--	3.4E+02	2.3E+02	na	--	1.4E+02	2.3E+02	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	6.4E+06	--	--	na	2.1E+03	--	--	na	6.4E+05	--	--	na	6.4E+05

Attachment 5

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^c	0	--	--	na	3.4E+02	--	--	na	4.3E+05	--	--	na	3.4E+01	--	--	na	4.3E+04	--	--	na	4.3E+04
Chloroform ^c	0	--	--	na	2.9E+04	--	--	na	3.6E+07	--	--	na	2.9E+03	--	--	na	3.6E+06	--	--	na	3.6E+06
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	1.3E+06	--	--	na	4.3E+02	--	--	na	1.3E+05	--	--	na	1.3E+05
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	1.2E+05	--	--	na	4.0E+01	--	--	na	1.2E+04	--	--	na	1.2E+04
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	6.3E-01	3.5E+00	na	--	2.1E-02	1.0E-02	na	--	1.5E+00	8.7E-01	na	--	6.3E-01	8.7E-01	na	--
Chromium III	0	2.0E+02	2.8E+01	na	--	1.5E+03	2.4E+03	na	--	5.4E+01	7.1E+00	na	--	3.9E+03	6.0E+02	na	--	1.5E+03	6.0E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.2E+02	9.4E+02	na	--	4.0E+00	2.8E+00	na	--	2.9E+02	2.3E+02	na	--	1.2E+02	2.3E+02	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Chrysene ^c	0	--	--	na	4.9E-01	--	--	na	6.1E+02	--	--	na	4.9E-02	--	--	na	6.1E+01	--	--	na	6.1E+01
Copper	0	3.9E+00	3.3E+00	na	--	3.0E+01	2.8E+02	na	--	1.1E+00	8.2E-01	na	--	8.0E+01	7.0E+01	na	--	3.0E+01	7.0E+01	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	1.7E+02	4.4E+02	na	6.6E+07	5.5E+00	1.3E+00	na	2.2E+04	4.0E+02	1.1E+02	na	6.6E+06	1.7E+02	1.1E+02	na	6.6E+06
DDD ^c	0	--	--	na	8.4E-03	--	--	na	1.1E+01	--	--	na	8.4E-04	--	--	na	1.1E+00	--	--	na	1.1E+00
DDE ^c	0	--	--	na	5.9E-03	--	--	na	7.4E+00	--	--	na	5.9E-04	--	--	na	7.4E-01	--	--	na	7.4E-01
DDT ^c	0	1.1E+00	1.0E-03	na	5.9E-03	8.4E+00	8.5E-02	na	7.4E+00	2.8E-01	2.5E-04	na	5.9E-04	2.0E+01	2.1E-02	na	7.4E-01	8.4E+00	2.1E-02	na	7.4E-01
Demeton	0	--	1.0E-01	na	--	--	8.5E+00	na	--	--	2.5E-02	na	--	--	2.1E+00	na	--	--	2.1E+00	na	--
Dibenz(a,h)anthracene ^c	0	--	--	na	4.9E-01	--	--	na	6.1E+02	--	--	na	4.9E-02	--	--	na	6.1E+01	--	--	na	6.1E+01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	3.7E+06	--	--	na	1.2E+03	--	--	na	3.7E+05	--	--	na	3.7E+05
Dichloromethane (Methylene Chloride) ^c	0	--	--	na	1.6E+04	--	--	na	2.0E+07	--	--	na	1.6E+03	--	--	na	2.0E+06	--	--	na	2.0E+06
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	5.2E+06	--	--	na	1.7E+03	--	--	na	5.2E+05	--	--	na	5.2E+05
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	8.0E+05	--	--	na	2.6E+02	--	--	na	8.0E+04	--	--	na	8.0E+04
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	8.0E+05	--	--	na	2.6E+02	--	--	na	8.0E+04	--	--	na	8.0E+04
3,3-Dichlorobenzidine ^c	0	--	--	na	7.7E-01	--	--	na	9.6E+02	--	--	na	7.7E-02	--	--	na	9.6E+01	--	--	na	9.6E+01
Dichlorobromomethane ^c	0	--	--	na	4.6E+02	--	--	na	5.8E+05	--	--	na	4.6E+01	--	--	na	5.8E+04	--	--	na	5.8E+04
1,2-Dichloroethane ^c	0	--	--	na	9.9E+02	--	--	na	1.2E+06	--	--	na	9.9E+01	--	--	na	1.2E+05	--	--	na	1.2E+05
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	5.2E+06	--	--	na	1.7E+03	--	--	na	5.2E+05	--	--	na	5.2E+05
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	4.3E+07	--	--	na	1.4E+04	--	--	na	4.3E+06	--	--	na	4.3E+06
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	2.4E+05	--	--	na	7.9E+01	--	--	na	2.4E+04	--	--	na	2.4E+04
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,2-Dichloropropane ^c	0	--	--	na	3.9E+02	--	--	na	4.9E+05	--	--	na	3.9E+01	--	--	na	4.9E+04	--	--	na	4.9E+04
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	5.2E+05	--	--	na	1.7E+02	--	--	na	5.2E+04	--	--	na	5.2E+04
Dieldrin ^c	0	2.4E-01	5.6E-02	na	1.4E-03	1.8E+00	4.8E+00	na	1.8E+00	6.0E-02	1.4E-02	na	1.4E-04	4.3E+00	1.2E+00	na	1.8E-01	1.8E+00	1.2E+00	na	1.8E-01
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	3.7E+07	--	--	na	1.2E+04	--	--	na	3.7E+06	--	--	na	3.7E+06
Di-2-Ethylhexyl Phthalate ^c	0	--	--	na	5.9E+01	--	--	na	7.4E+04	--	--	na	5.9E+00	--	--	na	7.4E+03	--	--	na	7.4E+03
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	7.0E+05	--	--	na	2.3E+02	--	--	na	7.0E+04	--	--	na	7.0E+04
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	8.9E+08	--	--	na	2.9E+05	--	--	na	8.9E+07	--	--	na	8.9E+07
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	3.7E+06	--	--	na	1.2E+03	--	--	na	3.7E+05	--	--	na	3.7E+05
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	4.3E+06	--	--	na	1.4E+03	--	--	na	4.3E+05	--	--	na	4.3E+05
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	2.3E+05	--	--	na	7.7E+01	--	--	na	2.3E+04	--	--	na	2.3E+04
2,4-Dinitrotoluene ^c	0	--	--	na	9.1E+01	--	--	na	1.1E+05	--	--	na	9.1E+00	--	--	na	1.1E+04	--	--	na	1.1E+04
Dioxin (2,3,7,8- tetrachlorodibenzo-p-dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	na	1.2E-07	--	--	na	1.2E-07	--	--	na	na
1,2-Diphenylhydrazine ^c	0	--	--	na	5.4E+00	--	--	na	6.8E+03	--	--	na	5.4E-01	--	--	na	6.8E+02	--	--	na	6.8E+02
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	1.7E+00	4.8E+00	na	7.3E+04	5.5E-02	1.4E-02	na	2.4E+01	4.0E+00	1.2E+00	na	7.3E+03	1.7E+00	1.2E+00	na	7.3E+03
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	1.7E+00	4.8E+00	na	7.3E+04	5.5E-02	1.4E-02	na	2.4E+01	4.0E+00	1.2E+00	na	7.3E+03	1.7E+00	1.2E+00	na	7.3E+03
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	7.3E+04	--	--	na	2.4E+01	--	--	na	7.3E+03	--	--	na	7.3E+03
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	6.5E-01	3.1E+00	na	2.5E+02	2.2E-02	9.0E-03	na	8.1E-02	1.6E+00	7.7E-01	na	2.5E+01	6.5E-01	7.7E-01	na	2.5E+01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	2.5E+02	--	--	na	8.1E-02	--	--	na	2.5E+01	--	--	na	2.5E+01

Attachment 5

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	8.9E+06	--	--	na	2.9E+03	--	--	na	8.9E+05	--	--	na	8.9E+05
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	1.1E+05	--	--	na	3.7E+01	--	--	na	1.1E+04	--	--	na	1.1E+04
Fluorene	0	--	--	na	1.4E+04	--	--	na	4.3E+06	--	--	na	1.4E+03	--	--	na	4.3E+05	--	--	na	4.3E+05
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	8.5E-01	na	--	--	2.5E-03	na	--	--	2.1E-01	na	--	--	2.1E-01	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	3.9E+00	3.2E-01	na	2.6E+00	1.3E-01	9.5E-04	na	2.1E-04	9.4E+00	8.1E-02	na	2.6E-01	3.9E+00	8.1E-02	na	2.6E-01
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	3.9E+00	3.2E-01	na	1.4E+00	1.3E-01	9.5E-04	na	1.1E-04	9.4E+00	8.1E-02	na	1.4E-01	3.9E+00	8.1E-02	na	1.4E-01
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	9.6E+00	--	--	na	7.7E-04	--	--	na	9.6E-01	--	--	na	9.6E-01
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	6.3E+05	--	--	na	5.0E+01	--	--	na	6.3E+04	--	--	na	6.3E+04
Hexachlorocyclohexane																					
Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.6E+02	--	--	na	1.3E-02	--	--	na	1.6E+01	--	--	na	1.6E+01
Hexachlorocyclohexane																					
Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	5.8E+02	--	--	na	4.6E-02	--	--	na	5.8E+01	--	--	na	5.8E+01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	7.2E+00	--	na	7.9E+02	2.4E-01	--	na	6.3E-02	1.7E+01	--	na	7.9E+01	7.2E+00	--	na	7.9E+01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	5.2E+06	--	--	na	1.7E+03	--	--	na	5.2E+05	--	--	na	5.2E+05
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	1.1E+05	--	--	na	8.9E+00	--	--	na	1.1E+04	--	--	na	1.1E+04
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	1.7E+02	na	--	--	5.0E-01	na	--	--	4.3E+01	na	--	--	4.3E+01	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	6.1E+02	--	--	na	4.9E-02	--	--	na	6.1E+01	--	--	na	6.1E+01
Iron	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	3.3E+07	--	--	na	2.6E+03	--	--	na	3.3E+06	--	--	na	3.3E+06
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Lead	0	2.3E+01	3.0E+00	na	--	1.7E+02	2.6E+02	na	--	6.6E+00	7.6E-01	na	--	4.8E+02	6.4E+01	na	--	1.7E+02	6.4E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	8.5E+00	na	--	--	2.5E-02	na	--	--	2.1E+00	na	--	--	2.1E+00	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.1E+01	6.5E+01	na	1.6E+01	3.5E-01	1.9E-01	na	5.1E-03	2.5E+01	1.6E+01	na	1.6E+00	1.1E+01	1.6E+01	na	1.6E+00
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	1.2E+06	--	--	na	4.0E+02	--	--	na	1.2E+05	--	--	na	1.2E+05
Methoxychlor	0	--	3.0E-02	na	--	--	2.6E+00	na	--	--	7.5E-03	na	--	--	6.4E-01	na	--	--	6.4E-01	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	6.4E+06	--	--	na	2.1E+03	--	--	na	6.4E+05	--	--	na	6.4E+05
Nickel	0	6.0E+01	7.5E+00	na	4.6E+03	4.6E+02	6.4E+02	na	1.4E+06	1.7E+01	1.9E+00	na	4.6E+02	1.2E+03	1.6E+02	na	1.4E+05	4.6E+02	1.6E+02	na	1.4E+05
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	5.8E+05	--	--	na	1.9E+02	--	--	na	5.8E+04	--	--	na	5.8E+04
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	1.0E+05	--	--	na	8.1E+00	--	--	na	1.0E+04	--	--	na	1.0E+04
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	2.0E+05	--	--	na	1.6E+01	--	--	na	2.0E+04	--	--	na	2.0E+04
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.8E+04	--	--	na	1.4E+00	--	--	na	1.8E+03	--	--	na	1.8E+03
Parathion	0	6.5E-02	1.3E-02	na	--	4.9E-01	1.1E+00	na	--	1.6E-02	3.3E-03	na	--	1.2E+00	2.8E-01	na	--	4.9E-01	2.8E-01	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.2E+00	na	--	--	3.5E-03	na	--	--	3.0E-01	na	--	--	3.0E-01	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.2E+00	na	--	--	3.5E-03	na	--	--	3.0E-01	na	--	--	3.0E-01	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.2E+00	na	--	--	3.5E-03	na	--	--	3.0E-01	na	--	--	3.0E-01	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.2E+00	na	--	--	3.5E-03	na	--	--	3.0E-01	na	--	--	3.0E-01	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.2E+00	na	--	--	3.5E-03	na	--	--	3.0E-01	na	--	--	3.0E-01	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.2E+00	na	--	--	3.5E-03	na	--	--	3.0E-01	na	--	--	3.0E-01	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.2E+00	na	--	--	3.5E-03	na	--	--	3.0E-01	na	--	--	3.0E-01	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	2.1E+00	--	--	na	1.7E-04	--	--	na	2.1E-01	--	--	na	2.1E-01

Attachment 5

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	5.8E-02	5.0E-01	na	1.0E+05	1.9E-03	1.5E-03	na	8.2E+00	1.4E-01	1.3E-01	na	1.0E+04	5.8E-02	1.3E-01	na	1.0E+04
Phenol	0	--	--	na	4.6E+06	--	--	na	1.4E+09	--	--	na	4.6E+05	--	--	na	1.4E+08	--	--	na	1.4E+08
Pyrene	0	--	--	na	1.1E+04	--	--	na	3.4E+06	--	--	na	1.1E+03	--	--	na	3.4E+05	--	--	na	3.4E+05
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Gross Alpha Activity	0	--	--	na	1.5E+01	--	--	na	4.6E+03	--	--	na	1.5E+00	--	--	na	4.6E+02	--	--	na	4.6E+02
Beta and Photon Activity (mrem/yr)	0	--	--	na	4.0E+00	--	--	na	1.2E+03	--	--	na	4.0E-01	--	--	na	1.2E+02	--	--	na	1.2E+02
Strontium-90	0	--	--	na	8.0E+00	--	--	na	2.4E+03	--	--	na	8.0E-01	--	--	na	2.4E+02	--	--	na	2.4E+02
Tritium	0	--	--	na	2.0E+04	--	--	na	6.1E+06	--	--	na	2.0E+03	--	--	na	6.1E+05	--	--	na	6.1E+05
Selenium	0	2.0E+01	5.0E+00	na	1.1E+04	1.5E+02	4.3E+02	na	3.4E+06	5.0E+00	1.3E+00	na	1.1E+03	3.6E+02	1.1E+02	na	3.4E+05	1.5E+02	1.1E+02	na	3.4E+05
Silver	0	3.6E-01	--	na	--	2.8E+00	--	na	--	1.1E-01	--	na	--	8.2E+00	--	na	--	2.8E+00	--	na	--
Sulfate	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	1.1E+02	--	--	na	1.4E+05	--	--	na	1.1E+01	--	--	na	1.4E+04	--	--	na	1.4E+04
Tetrachloroethylene ^C	0	--	--	na	8.9E+01	--	--	na	1.1E+05	--	--	na	8.9E+00	--	--	na	1.1E+04	--	--	na	1.1E+04
Thallium	0	--	--	na	6.3E+00	--	--	na	1.9E+03	--	--	na	6.3E-01	--	--	na	1.9E+02	--	--	na	1.9E+02
Toluene	0	--	--	na	2.0E+05	--	--	na	6.1E+07	--	--	na	2.0E+04	--	--	na	6.1E+06	--	--	na	6.1E+06
Total dissolved solids	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Toxaphene ^C	0	7.3E-01	2.0E-04	na	7.5E-03	5.5E+00	1.7E-02	na	9.4E+00	1.8E-01	5.0E-05	na	7.5E-04	1.3E+01	4.3E-03	na	9.4E-01	5.5E+00	4.3E-03	na	9.4E-01
Tributyltin	0	4.6E-01	6.3E-02	na	--	3.5E+00	5.4E+00	na	--	1.2E-01	1.6E-02	na	--	8.3E+00	1.3E+00	na	--	3.5E+00	1.3E+00	na	--
1,2,4-Trichlorobenzene	0	--	--	na	9.4E+02	--	--	na	2.9E+05	--	--	na	9.4E+01	--	--	na	2.9E+04	--	--	na	2.9E+04
1,1,2-Trichloroethane ^C	0	--	--	na	4.2E+02	--	--	na	5.3E+05	--	--	na	4.2E+01	--	--	na	5.3E+04	--	--	na	5.3E+04
Trichloroethylene ^C	0	--	--	na	8.1E+02	--	--	na	1.0E+06	--	--	na	8.1E+01	--	--	na	1.0E+05	--	--	na	1.0E+05
2,4,6-Trichlorophenol ^C	0	--	--	na	6.5E+01	--	--	na	8.1E+04	--	--	na	6.5E+00	--	--	na	8.1E+03	--	--	na	8.1E+03
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--	--	--	na	--
Vinyl Chloride ^C	0	--	--	na	6.1E+01	--	--	na	7.6E+04	--	--	na	6.1E+00	--	--	na	7.6E+03	--	--	na	7.6E+03
Zinc	0	3.9E+01	4.4E+01	na	6.9E+04	2.9E+02	3.7E+03	na	2.1E+07	1.1E+01	1.1E+01	na	6.9E+03	7.8E+02	9.3E+02	na	2.1E+06	2.9E+02	9.3E+02	na	2.1E+06

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	1.3E+05
Arsenic	1.0E+03
Barium	na
Cadmium	2.7E+00
Chromium III	3.6E+02
Chromium VI	4.9E+01
Copper	1.2E+01
Iron	na
Lead	3.9E+01
Manganese	na
Mercury	1.6E+00
Nickel	9.5E+01
Selenium	6.1E+01
Silver	1.1E+00
Zinc	1.2E+02

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Attachment 5

Mixing Zone Predictions for

Fauquier Springs CC STP

Effluent Flow = 0.02 MGD
Stream 7Q10 = 1.68 MGD
Stream 30Q10 = 3.6 MGD
Stream 1Q10 = 1.422 MGD
Stream slope = 0.006 ft/ft
Stream width = 50 ft
Bottom scale = 3
Channel scale = 1

Mixing Zone Predictions @ 7Q10

Depth = .1665 ft
Length = 10589.3 ft
Velocity = .3161 ft/sec
Residence Time = .3877 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 7Q10 may be used.

Mixing Zone Predictions @ 30Q10

Depth = .2624 ft
Length = 7228.07 ft
Velocity = .4271 ft/sec
Residence Time = .1959 days

Recommendation:

A complete mix assumption is appropriate for this situation and the entire 30Q10 may be used.

Mixing Zone Predictions @ 1Q10

Depth = .1508 ft
Length = 11502.92 ft
Velocity = .2961 ft/sec
Residence Time = 10.7926 hours

Recommendation:

A complete mix assumption is appropriate for this situation providing no more than 9.27% of the 1Q10 is used.

Facility = Fauquier Springs CC STP (VA0077411)

Chemical = Ammonia as Nitrogen

Chronic averaging period = 30

WLA_a = 15.6

WLA_c = 37.8

Q.L. = 0.2

samples/mo. = 1

samples/wk. = 1

Summary of Statistics:

observations = 1

Expected Value = 9

Variance = 29.16

C.V. = 0.6

97th percentile daily values = 21.9007

97th percentile 4 day average = 14.9741

97th percentile 30 day average = 10.8544

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 15.6

Average Weekly limit = 15.6

Average Monthly Limit = 15.6

The data are:

Facility = Fauquier Springs CC STP (VA0077411)

Chemical = TRC

Chronic averaging period = 4

WLA_d = 0.14423

WLA_c = 0.19828

Q.L. = 0.1

samples/mo. = 28

samples/wk. = 7

Summary of Statistics:

observations = 1

Expected Value = .2

Variance = .0144

C.V. = 0.6

97th percentile daily values = .486683

97th percentile 4 day average = .332758

97th percentile 30 day average = .241210

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Acute Toxicity

Maximum Daily Limit = 0.14423

Average Weekly limit = 0.088082300429845

Average Monthly Limit = 0.071912092564001

The data are:

0.2

The regional modeling system has been used to 1) verify the adequacy of the current permit limits for the reissuance of Fauquier Springs Country Club and 2) to verify that antidegradation, a D.O. drop of not more than 0.2 mg/l, would not occur.

The model has been run from the discharge point of the proposed River Ridge Utility Company STP upstream of the Fauquier Springs Country Club STP to a point 3 miles downstream of the Fauquier Springs Country Club STP. The permit limits for the River Ridge Utility Company STP and the proposed South Wales STP were used to simulate background conditions for the river, once these facilities are constructed.

The TKN limit for Fauquier Springs Country Club STP was derived by doubling the facility's current ammonia as nitrogen limit of 15.4 mg/l, since the assumption is made that TKN is equal to twice the ammonia as nitrogen value.

REGIONAL MODELING SYSTEM VERSION 3.2

MODEL SIMULATION FOR THE River Ridge Utility Company STP DISCHARGE
TO Rappahannock River

THE SIMULATION STARTS AT THE River Ridge Utility Company STP DISCHARGE

***** PROPOSED PERMIT LIMITS *****

FLOW = .05 MGD cBOD5 = 9 Mg/L TKN = 3 Mg/L D.O. = 5 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.367 Mg/L ****

THE SECTION BEING MODELED IS BROKEN INTO 3 SEGMENTS
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

***** BACKGROUND CONDITIONS *****

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 1.62000 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 7.296 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

***** MODEL PARAMETERS *****

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. ½C	DO-SAT Mg/L
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1	2.10	0.816	8.571	0.500	0.150	0.000	335.00	26.00	8.106
2	1.90	0.753	6.316	0.500	0.150	0.000	310.00	26.00	8.113
3	3.00	0.522	3.000	0.500	0.150	0.000	292.50	26.00	8.118

(The K Rates shown are at 20½C ... the model corrects them for temperature.)

RESPONSE FOR SEGMENT 1

TOTAL STREAMFLOW = 1.6700 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	7.227	5.524	0.000
0.100	0.100	7.263	5.497	0.000
0.200	0.200	7.296	5.470	0.000
0.300	0.300	7.296	5.443	0.000
0.400	0.400	7.296	5.416	0.000
0.500	0.500	7.296	5.390	0.000
0.600	0.600	7.296	5.363	0.000
0.700	0.700	7.296	5.337	0.000
0.800	0.800	7.296	5.310	0.000
0.900	0.900	7.296	5.284	0.000
1.000	1.000	7.296	5.258	0.000
1.100	1.100	7.296	5.232	0.000
1.200	1.200	7.296	5.207	0.000
1.300	1.300	7.296	5.181	0.000
1.400	1.400	7.296	5.155	0.000
1.500	1.500	7.296	5.130	0.000
1.600	1.600	7.296	5.105	0.000
1.700	1.700	7.296	5.080	0.000
1.800	1.800	7.296	5.055	0.000
1.900	1.900	7.296	5.030	0.000
2.000	2.000	7.296	5.005	0.000
2.100	2.100	7.296	5.000	0.000

FOR THE DISCHARGE AT THE END OF SEGMENT 1

DISCHARGER = South Wales STP (Proposed Facility)

FLOW = .8568 MGD cBOD5 = 3 Mg/L TKN = 3 Mg/L D.O. = 7.6 Mg/L

FLOW FROM INCREMENTAL DRAINAGE AREA = 0.0768 MGD

RESPONSE FOR SEGMENT 2

TOTAL STREAMFLOW = 2.6036 MGD

(Including Discharge, Tributaries and Incremental D.A. Flow)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	2.100	7.396	5.823	0.000
0.100	2.200	7.302	5.792	0.000
0.200	2.300	7.302	5.761	0.000
0.300	2.400	7.302	5.730	0.000
0.400	2.500	7.302	5.700	0.000
0.500	2.600	7.302	5.669	0.000
0.600	2.700	7.302	5.639	0.000
0.700	2.800	7.302	5.609	0.000
0.800	2.900	7.302	5.579	0.000
0.900	3.000	7.302	5.549	0.000
1.000	3.100	7.302	5.520	0.000
1.100	3.200	7.302	5.490	0.000
1.200	3.300	7.302	5.461	0.000
1.300	3.400	7.302	5.432	0.000
1.400	3.500	7.302	5.403	0.000
1.500	3.600	7.302	5.374	0.000
1.600	3.700	7.302	5.345	0.000
1.700	3.800	7.302	5.317	0.000
1.800	3.900	7.302	5.289	0.000
1.900	4.000	7.302	5.260	0.000

FOR THE DISCHARGE AT THE END OF SEGMENT 2

DISCHARGER = Fauquier Springs Country Club STP

FLOW = .02 MGD cBOD5 = 30 Mg/L TKN = 30.8 Mg/L D.O. = 6 Mg/L

FLOW FROM INCREMENTAL DRAINAGE AREA = 0.0121 MGD

RESPONSE FOR SEGMENT 3

TOTAL STREAMFLOW = 2.6357 MGD

(Including Discharge, Tributaries and Incremental D.A. Flow)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	4.000	7.292	5.788	0.913
0.100	4.100	7.279	5.744	0.911
0.200	4.200	7.266	5.700	0.908
0.300	4.300	7.255	5.656	0.906
0.400	4.400	7.244	5.613	0.903
0.500	4.500	7.234	5.570	0.901
0.600	4.600	7.225	5.527	0.898
0.700	4.700	7.216	5.484	0.896
0.800	4.800	7.208	5.442	0.893
0.900	4.900	7.201	5.401	0.891
1.000	5.000	7.194	5.359	0.888
1.100	5.100	7.188	5.318	0.886
1.200	5.200	7.183	5.277	0.883
1.300	5.300	7.178	5.237	0.881
1.400	5.400	7.173	5.196	0.878
1.500	5.500	7.169	5.157	0.876
1.600	5.600	7.166	5.117	0.874
1.700	5.700	7.163	5.078	0.871
1.800	5.800	7.160	5.039	0.869
1.900	5.900	7.158	5.000	0.867
2.000	6.000	7.193	5.000	0.864
2.100	6.100	7.228	5.000	0.862
2.200	6.200	7.261	5.000	0.859
2.300	6.300	7.292	5.000	0.857
2.400	6.400	7.307	5.000	0.854
2.500	6.500	7.307	5.000	0.852
2.600	6.600	7.307	5.000	0.850
2.700	6.700	7.307	5.000	0.847
2.800	6.800	7.307	5.000	0.845
2.900	6.900	7.307	5.000	0.843
3.000	7.000	7.307	5.000	0.840

REGIONAL MODELING SYSTEM
07-20-1998 08:59:59

Ver 3.2 (OWRM - 9/90)

DATA FILE = FAQSP1.MOD

REGIONAL MODELING SYSTEM

VERSION 3.2

DATA FILE SUMMARY

THE NAME OF THE DATA FILE IS: FAQSP1.MOD

THE STREAM NAME IS: Rappahannock River
THE RIVER BASIN IS: Rappahannock River
THE SECTION NUMBER IS: 3
THE CLASSIFICATION IS: III

STANDARDS VIOLATED (Y/N) = N
STANDARDS APPROPRIATE (Y/N) = Y

DISCHARGE WITHIN 3 MILES (Y/N) = N

THE DISCHARGE BEING MODELED IS: River Ridge Utility Company STP

PROPOSED LIMITS ARE:

FLOW = .05 MGD
BOD5 = 9 MG/L
TKN = 3 MG/L
D.O. = 5 MG/L

THE NUMBER OF SEGMENTS TO BE MODELED = 3

7Q10 WILL BE CALCULATED BY: DRAINAGE AREA COMPARISON

THE GAUGE NAME IS: Rappahannock River near Warrenton
GAUGE DRAINAGE AREA = 195 SQ.MI.
GAUGE 7Q10 = 1.62 MGD
DRAINAGE AREA AT DISCHARGE = 195 SQ.MI.

STREAM A DRY DITCH AT DISCHARGE (Y/N) = N
ANTIDegradation APPLIES (Y/N) = Y

ALLOCATION DESIGN TEMPERATURE = 26 $\frac{1}{2}$ C

SEGMENT INFORMATION

SEGMENT # 1

SEGMENT ENDS BECAUSE: A DISCHARGE ENTERS AT END

SEGMENT LENGTH = 2.1 MI

SEGMENT WIDTH = 8 FT

SEGMENT DEPTH = 1 FT

SEGMENT VELOCITY = .3 FT/SEC

DRAINAGE AREA AT SEGMENT START = 195 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 204.24 SQ.MI.

ELEVATION AT UPSTREAM END = 350 FT

ELEVATION AT DOWNSTREAM END = 320 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MOSTLY STRAIGHT

POOLS AND RIFFLES (Y/N) = N

THE BOTTOM TYPE = SAND

SLUDGE DEPOSITS = NONE

AQUATIC PLANTS = NONE

ALGAE OBSERVED = NONE

WATER COLORED GREEN (Y/N) = N

THE DISCHARGE AT THE SEGMENT END IS: South Wales STP (Proposed Facility)

ITS CONCENTRATIONS ARE:

FLOW = .8568 MGD

BOD5 = 3 MG/L

TKN = 3 MG/L

D.O. = 7.6 MG/L

SEGMENT INFORMATION

SEGMENT # 2

SEGMENT ENDS BECAUSE: A DISCHARGE ENTERS AT END

SEGMENT LENGTH = 1.9 MI

SEGMENT WIDTH = 13 FT

SEGMENT DEPTH = 1 FT

SEGMENT VELOCITY = .3 FT/SEC

DRAINAGE AREA AT SEGMENT START = 204.24 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 205.7 SQ.MI.

ELEVATION AT UPSTREAM END = 320 FT

ELEVATION AT DOWNSTREAM END = 300 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MOSTLY STRAIGHT

POOLS AND RIFFLES (Y/N) = N

THE BOTTOM TYPE = SAND

SLUDGE DEPOSITS = NONE

AQUATIC PLANTS = NONE

ALGAE OBSERVED = NONE

WATER COLORED GREEN (Y/N) = N

THE DISCHARGE AT THE SEGMENT END IS: Fauquier Springs Country Club STP

ITS CONCENTRATIONS ARE:

FLOW = .02 MGD

BOD5 = 30 MG/L

TKN = 30.8 MG/L

D.O. = 6 MG/L

SEGMENT INFORMATION

SEGMENT # 3

SEGMENT ENDS BECAUSE: THE MODEL ENDS

SEGMENT LENGTH = 3 MI

SEGMENT WIDTH = 18 FT
SEGMENT DEPTH = .8 FT
SEGMENT VELOCITY = .3 FT/SEC

DRAINAGE AREA AT SEGMENT START = 205.7 SQ.MI.
DRAINAGE AREA AT SEGMENT END = 208 SQ.MI.

ELEVATION AT UPSTREAM END = 300 FT
ELEVATION AT DOWNSTREAM END = 285 FT

THE CROSS SECTION IS: RECTANGULAR
THE CHANNEL IS: MOSTLY STRAIGHT

POOLS AND RIFFLES (Y/N) = N

THE BOTTOM TYPE = SAND
SLUDGE DEPOSITS = NONE
AQUATIC PLANTS = NONE
ALGAE OBSERVED = NONE
WATER COLORED GREEN (Y/N) = N

REGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
07-20-1998 09:01:22

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY
Northern Regional Office
Memorandum

Subject: **Fauquier Springs Country Club, VPDES Discharge Permit Renewal**
To: Susan Oakes, Water Permit Writer
Through: Cynthia Sale, Environmental Manager, Remediation *C Sale*
From: Joseph Glassman, Environmental Specialist *JG*
Date: August 15, 2008

As requested, I have reviewed the groundwater monitoring data and proposed corrective action plan for the subject site. I also visited the site on August 13, 2008 and spoke with Robert Foley, president of Fauquier Springs Country Club.

Data Review

I reviewed quarterly groundwater monitoring data for 2003, 2004, 2006, 2007, and the first and second quarters of 2008. (It does not appear that any data were collected in 2005.) Samples were collected from three monitoring wells: one upgradient and two downgradient. Samples were analyzed for ammonia, nitrate, nitrite, Total Dissolved Solids (TDS), Total Organic Carbon (TOC), and fecal coliform. As shown on the attached graphs, ammonia, TDS and TOC concentrations in downgradient wells are significantly greater than concentrations in the upgradient well. Therefore, it appears that seepage is occurring from the lagoon. The concentrations appear to be similar to the levels cited in Tom Lancaster's analysis in 1998; although, the more recent data appear to show a slight downward trend. Ammonia and TDS concentrations in downgradient wells exceed state groundwater quality standards. TOC levels in downgradient wells exceed groundwater quality standards on some occasions. I could not draw any conclusions concerning nitrate, nitrite, and fecal coliform due to sporadic detections of these parameters.

During my site visit, I did not observe any signs of seepage along the bank of the Rappahannock River. However, the groundwater elevation measurements from the monitoring wells indicate that groundwater should be recharging the river. The lagoon is about 100 feet from the river. Therefore, there is a potential for impact from the lagoon seepage.

Corrective action to address the ongoing seepage from the lagoon into the groundwater and exceedances of groundwater quality standards appears to be warranted.

Corrective Action Plan

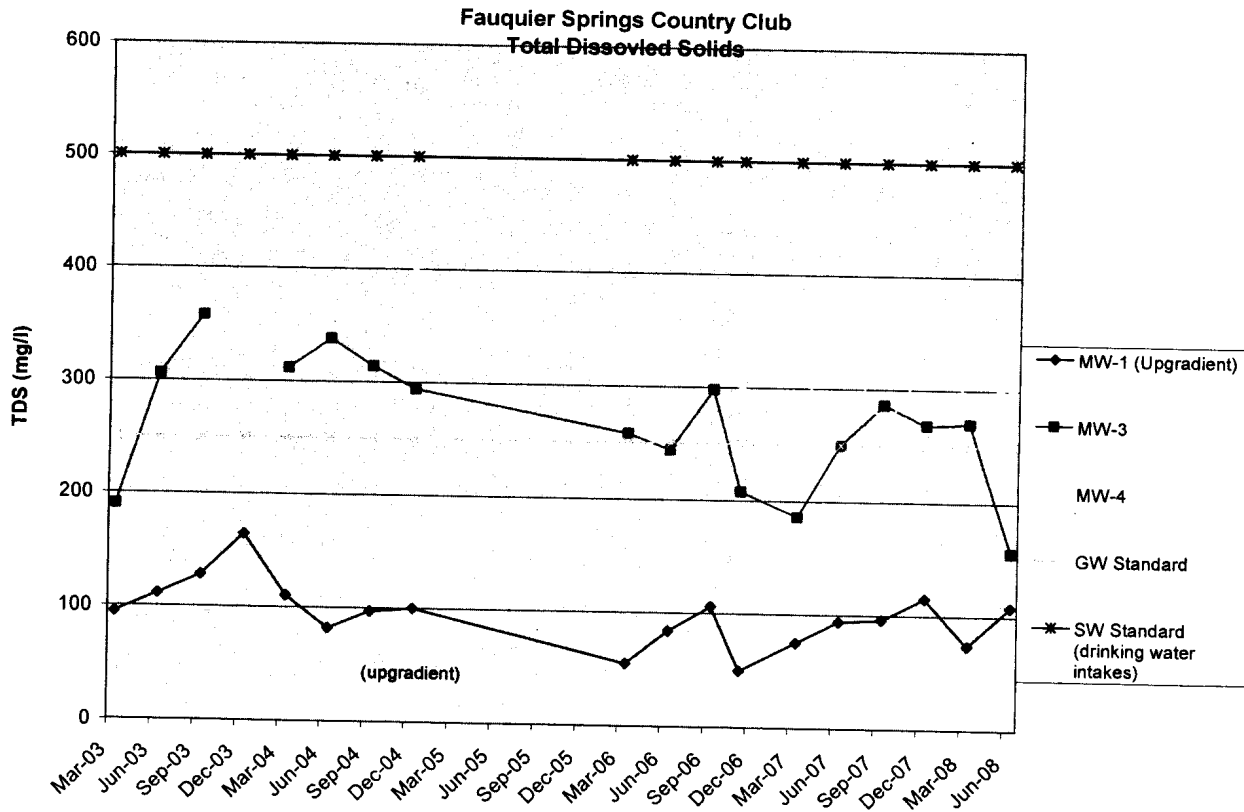
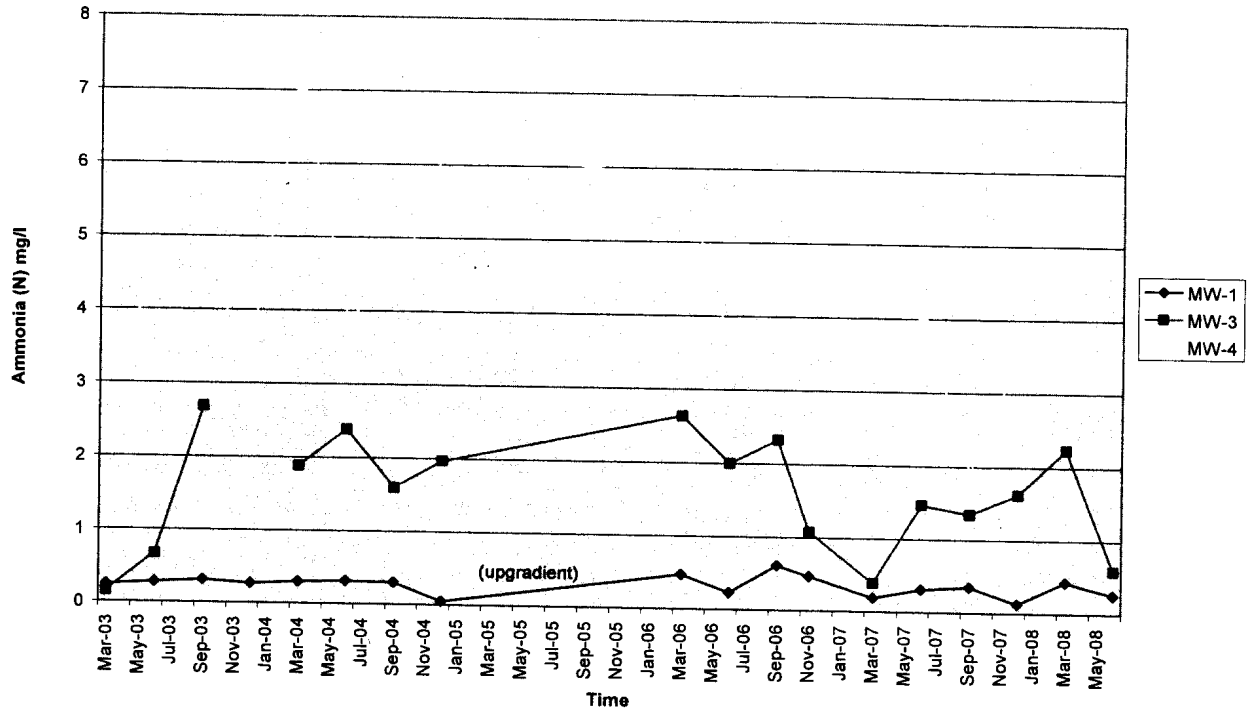
The CAP submitted by Fauquier Springs in 1999 proposed to line the lagoon with bentonite using a method the bentonite suppliers refer to as the sprinkle method. Using the sprinkle method, the lagoon is not drained, and granular bentonite is broadcast from a boat and allowed to settle on the lagoon bottom. The CAP proposes to apply 100 lbs of bentonite per square foot, or about 20 times the normal

recommended rate. The CAP includes a followup plan to monitor groundwater for six months to determine if the bentonite application has been successful. If the monitoring data show that it has not been successful, then the CAP proposes "geotechnical studies" to design a slurry wall or other method to intercept groundwater.

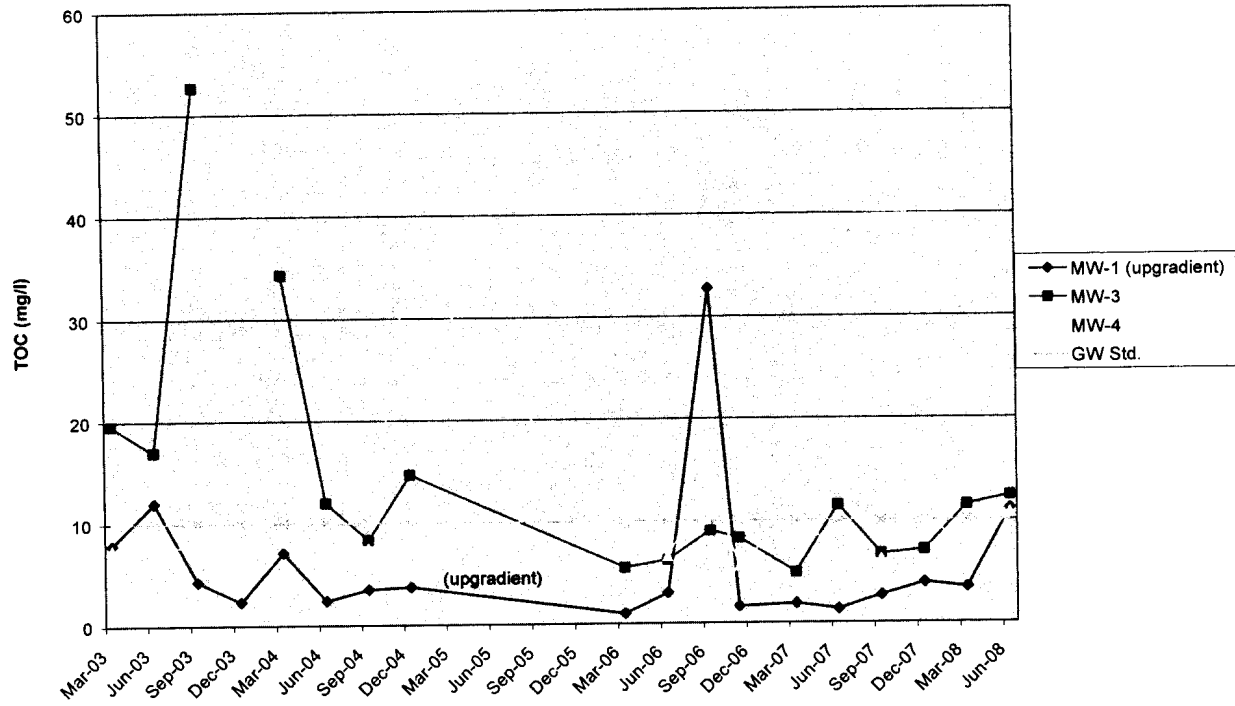
Information obtained from the bentonite suppliers indicates that the sprinkle method is, in general, less effective than draining the lagoon and applying the bentonite, or bentonite-soil mixture, directly to the surface. The sprinkle method is generally indicated for cases where the leak location is known, and the bentonite can be applied directly to the leak location. In this situation, the site of the leakage is not known. The success of the bentonite application also depends on the condition of the lagoon bottom. No information was provided in the CAP on the condition of the lagoon bottom except to say that there could be (in 1999) six to nine inches of sludge on the bottom. I observed vegetation in the lagoon during my site visit as well as large trees surrounding the pond. If vegetation or tree roots have breached the bottom of the lagoon, the seal may not be effective, or problems may arise as this material decays below the bentonite seal. In addition, Mr. Foley indicated that, to his knowledge, sludge has not been removed from the pond in 20 years. It is not known how the sludge will be impacted by placing a layer of bentonite on top. The sludge may degrade anaerobically, possibly creating a methane buildup. Nor did the CAP address how the performance of the lagoon would be affected by the loss of volume caused by the bentonite layer

I recommend that DEQ request a revised CAP addressing the issues noted above.

Fauquier Springs Country Club
Ammonia in Groundwater (mg/l)



Fauquier Springs Country Club
Total Organic Carbon



Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Warrenton/Fauquier County, Virginia.

PUBLIC COMMENT PERIOD: November 20, 2008 to 5:00 p.m. on December 19, 2008

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Sulphur Springs Investment Corp., P.O. Box 419, Warrenton, VA 22186, VA0077411

NAME AND ADDRESS OF FACILITY: Fauquier Springs Country Club STP, 9236 Tournament Drive, Warrenton, VA 20186

PROJECT DESCRIPTION: Sulphur Springs Investment Corp. has applied for a reissuance of a permit for the private Fauquier Springs Country Club STP. The applicant proposes to release treated sewage wastewaters from residential areas, golf course and country club at a rate of 0.02 million gallons per day into a water body. Sludge from the treatment process will be removed for treatment and disposal if needed by a licensed contractor. The facility proposes to release the treated sewage in the Rappahannock River in Warrenton/Fauquier County in the Rappahannock River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, BOD₅, Chlorine, Total Suspended Solids, Ammonia as Nitrogen, Dissolved Oxygen, *E. coli*, and Flow.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment.

Name: Susan Oakes

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3863 E-mail: saoakes@deq.virginia.gov Fax: (703) 583-3821

Revised 2/2003

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Fauquier Springs Country Club STP
NPDES Permit Number: VA0077411
Permit Writer Name: Susan Oakes
Date: August 5, 2008

Major []

Minor [X]

Industrial []

Municipal [X]

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?			X
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?		X	
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water? (Downstream Impairments)	X		
a. Has a TMDL been developed and approved by EPA for the impaired water?	X		
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?		X	
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?	X		
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?		X	
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?	X		
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs

(To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration

	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements

	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?	X		

II.C. Technology-Based Effluent Limits (POTWs)

	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits

	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?		X	
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?	X		
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?	X		
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?	X		
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

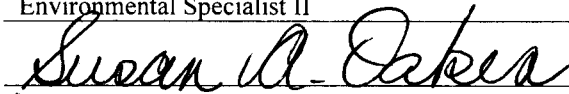
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?			X
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?			X

II.G. Standard Conditions			Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?			X		
List of Standard Conditions – 40 CFR 122.41					
Duty to comply	Property rights	Reporting Requirements			
Duty to reapply	Duty to provide information	Planned change			
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance			
not a defense	Monitoring and records	Transfers			
Duty to mitigate	Signatory requirement	Monitoring reports			
Proper O & M	Bypass	Compliance schedules			
Permit actions	Upset	24-Hour reporting			
		Other non-compliance			
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?			X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Susan A. Oakes</u>
Title	<u>Environmental Specialist II</u>
Signature	<u></u>
Date	<u>August 5, 2008</u>